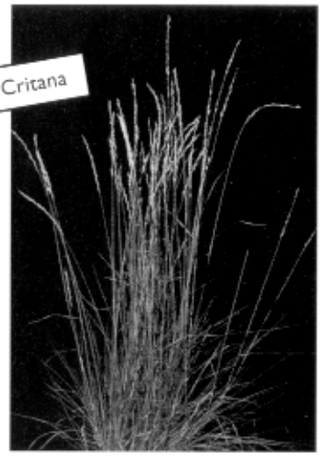
Released Plants

The PMC has released and maintains foundation seed for eleven commercially available plant varieties:



'Critana' Thickspike Wheatgrass

A grass for critical area stabilization, mined land reclamation, and range revegation.
Released: 1971.

'Lutana' Cicer Milkvetch

A productive, non-bloat legume for hay and pasture.
Released: 1969.

'Wytana' Fourwing Saltbush

A native shrub for mined land reclamation, range revegetation, and wildlife habitat improvement.
Released: 1976.

'Goshen' Prairie Sandreed

A grass for range revegetation and mined land reclamation on very sandy soils.
Released: 1976.

'Rosana' Western Wheatgrass

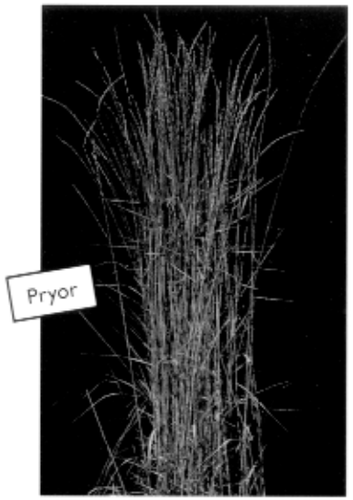
A native grass for range revegetation, critical area stabilization, and mined land reclamation.
Released: 1972.

'Shoshone' Beardless Wildrye

One of the most salt tolerant grasses. Used for saline soil revegation.
Released: 1980

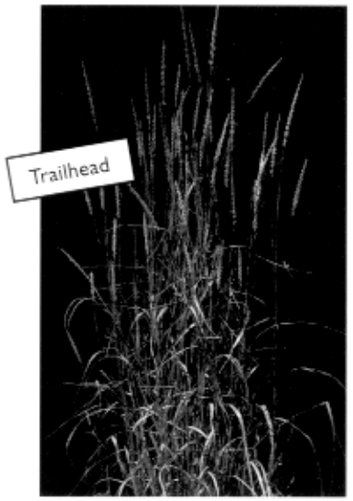
'Bozoisky-Select' Russian Wildrye

Joint Agriculture Research Service/Natural Resources Conservation Service release. Excellent seedling.



'Pryor' Slender Wheatgrass

Quick-to-establish native grass used for stabilizing soils.
Released: 1988

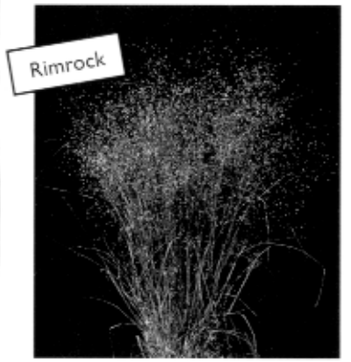


'Trailhead' Basin Wildrye

Bunchgrass popular for standing winter feeds and wildlife cover.
Released: 1991

'Garrison' Creeping Foxtail

Productive pasture grass for use in permanently wet areas.
Released: 1963 by Bismarck, ND Plant Materials Center



'Rimrock' Indian Ricegrass

Superior seed retention. Used for sandy soil stabilization and wildlife food.
Released: 1996

Bridger Select Rocky Mountain Juniper

A native medium-sized evergreen tree for windbreaks, living snowfences and xeriscapes on dry sites.
Released: 1997

4/97 MT

USDA

United States Department of Agriculture

Natural Resources Conservation Service

Bridger Plant Materials Center

The Site

The Plant Materials Center at Bridger, Montana, was started in 1959 to give Montana and Wyoming Soil and Water Conservation District cooperators a place to evaluate the growth and use of plant materials for solving their soil and water conservation problems.

The Montana Association of Conservation Districts and the Wyoming Association of Conservation Districts own the 140 irrigated acres. The Center is operated by the Natural Resources Conservation Service to serve both states.

Evaluating New Plants

The primary purpose of the Plant Materials Center—evaluating plants for solving conservation problems—is accomplished through the steps described below.

Problem identification

Assembly of plant materials

Initial evaluations

Initial seed and plant increase

Advanced evaluations

Field-scale seed and plant increase

Final testing in field plantings

Name and release of new cultivars

Production of foundation seed and plants

Commercial production

Availability of new plant cultivars

Promotion of improved plant cultivars

Initial evaluation

In the initial evaluation approximately 200 to 300 plant ecotypes are collected yearly and planted in 20-foot-long rows at the Plant Materials Center. To provide a standard of comparison, observations on the plant's performance are recorded for several years in comparison with a plant currently in common use.

Advanced evaluation

Superior plants from the initial evaluation are then put into seed production. During this period, seed is harvested for additional observation and evaluation.

In the advanced stage, the promising plants are evaluated in comparison with the standard plants under closely controlled conditions at the PMC or remote sites.

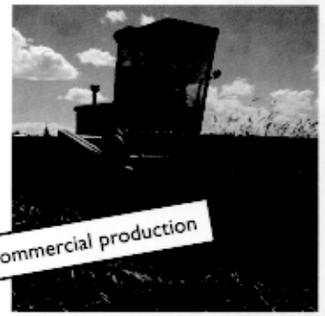
Plants showing superiority in the advanced evaluations are put into field-scale seed and/or plant increase. Planted on larger acreages, the plants produce enough seed for testing at locations throughout Montana and Wyoming. Management techniques for the production and harvest of seed are also developed at this time.

When enough seed has been gathered, final testing in field plantings begins. Plantings by Conservation District cooperators in Montana and Wyoming test the performance of these selected ecotypes under actual use conditions. Results are again evaluated in comparison with standard or commonly used plants.

Final testing in field plantings for actual use

Plants showing superior performance during the first five steps are given a name and, in cooperation with the Montana and Wyoming State Experiment Stations, are released for commercial seed production. Of the approximately 4,500 plant ecotypes observed at the Bridger PMC since 1959, eleven new cultivars have resulted.

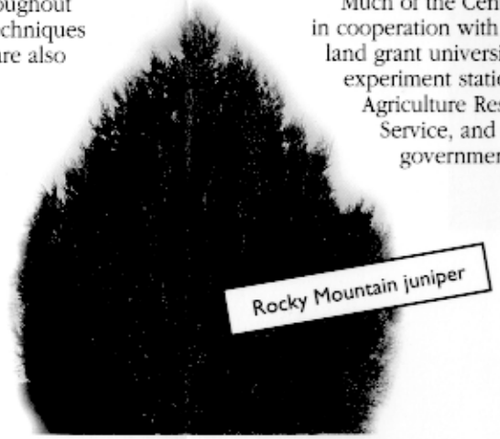
After a new plant variety is released, the PMC continues to produce breeder and foundation seed as long as the cultivar is in demand.



Commercial production

The Center also works with commercial seed growers. Growers can obtain foundation seed for the cultivars through the crop improvement associations of Montana State University or the University of Wyoming.

Much of the Center's work is accomplished in cooperation with conservation districts, land grant universities, experiment stations, Agriculture Research Service, and other government agencies.



Rocky Mountain juniper

Plant Materials Programs for Specific Land Uses

Activities at the PMC are divided into programs that evaluate plant materials according to land uses. Plant materials needed to improve conservation for targeted land uses are identified, and projects are developed to meet those needs. Following is a list of the center's current and proposed projects:

Rangeland, Wetland, Woodland

Assist land managers to identify, collect, and research establishment and propagation techniques and to produce culturally significant, threatened and engangered, and indigenous plants for restoration projects.

Riparian

Select species and develop establishment techniques on streambanks and shorelines.

Cropland

Select green manure species to reduce erosion and inorganic fertilizer inputs.

Test herbicides for grassy weed control in grass seed production fields.

Rangeland

Identify and select species for rangeland improvement and diversity in 10-inch or less rainfall areas.

Select legumes, forbs, and shrubs for biodiversity and winter grazing.

Pasture and Hay

Identify and select species to extend grazing periods.

Forestland

Determine species and establishment techniques for forage production, erosion control, and noxious weed suppression.

Ponderosa pine

Farmstead

Identify, select, and secure seed supplies of trees and shrubs for windbreaks, shelterbelts, and xeriscapes.

Bridger Plant Materials Center

Is the place you call home a large-acre farm/ranch operation? A small-acre ranchette? A single-family residence in town or in a subdivision? Or perhaps recreation and relaxation are pursued in the country or in a National Park, aside a clean stream or lake. Maybe hunting upland game birds or big game animals in thewide open spaces or the timbered high country is a preferred activity? Has employment in agriculture, construction, logging, mining, or tourism been a way of life? If so, then there's a good chance that a plant materials center has devoted time and effort in helping solve the environmental problems that occur in all of the above! Vegetative solutions are applied to these and other conservation problems with a variety of plant materials (i.e., grasses, wildflowers, shrubs, and trees); thus the name "Plant Materials Center (PMC)."

Plant Materials (PM) is a national program within the NRCS, with 26PMC's across the United States, including Alaska, Hawaii, Puerto Rico, and the National PMC in Beltsville, Maryland. In the geographical region of the Northern Great Plains, four PMCs (Meeker, CO, Manhattan, KS, Bridger, MT, and Bismarck, ND,) cooperate to transcend state boundaries and provide customer service. The Bridger PMC primarily serves Montana and Wyoming, and actively collaborates with an additional seven Centers in the western United States. Furthermore, our service area has a Plant Materials Specialist (PMS) based out of the NRCS State Office in Bozeman, MT. The PMS is responsible for overall PM program management in Montana and Wyoming, PM efforts at the field office level, coordination of field evaluation trials and cooperative demonstration plantings, provides representation for PM on national issues, and assists in distribution and delivery of foundation seed to various state Crop Improvement Associations.

The Bridger PMC was established in 1959 and is a 140-acre farm owned by the Soil and Water Conservation Districts of Montana and Wyoming and operated by the USDA Natural Resources Conservation Service (NRCS). Conservation districts in both states play a major role in identifying conservation problems or needs and providing valuable input to the development of the Center's Long-Range Plan. Their ownership, involvement, and contributions, along with many other cooperating partners, has kept the PMC focused on issues important to farmers and ranchers, public and private land managers, university personnel, commercial seed growers, Native Americans, state forestry experts, international interests, environmentalists, highway administrators, community development specialists, and nursery operators, just to mention a few.

A large portion of the work conducted at the Center revolves around plant selection and development. The process begins with identification of an environmental problem/need and generally proceeds as follows wildland collection of plant species found growing on sites similar to the problem area; initial planting and screening of test material (usually at the PMC) for a period of two to four years; secondary evaluation of better performing test material in comparison to commercially available species (another two to four years); selection of superior performing test material and initial seed increase (one to three years); off-Center field trials to evaluate plant performance under "real world" conditions (multiple years) and; final release of a selected plant cultivar. The PMC is then responsible for future maintenance and production of foundation seed

and it's distribution to commercial seed growers. The Bridger PMC has released 12 cultivars: nine grasses, one legume, one shrub, and one tree species.

In addition to plant selection and development, transfer of related technology tofield offices and other partners is very important. For example, it's necessary to present seed dormancy-breaking protocols, planting techniques, seed processing mechanisms (harvesting, cleaning, and storage), cultural treatments (mechanical, chemical, and nutrient) sexual and asexual propagation, forage yield strategies, and seed production techniques in both verbal and written formats. The staff also provides tours of the Center and conducts training as requested. Persons with questions and/or other interests can call 406-662-3579, fax 406-662-3428, write to Rt. 1, Box 1189 Bridger, MT 59014, or visit 99 South River Road in Bridger. The PMC is now an active navigator on the communication superhighway and can be found on the Internet at http://Plant-Materials.nrcs.usda.gov.

Susan R. Winslow
Agronomist